



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/538,335

06/10/2005

Thomas A. M. Kevenaar

NI021256

1594

24737

7590

01/22/2009

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

SMITHERS, MATTHEW

ART UNIT

PAPER NUMBER

2437

MAIL DATE

DELIVERY MODE

01/22/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                        |                                        |  |
|------------------------------|----------------------------------------|----------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/538,335   | <b>Applicant(s)</b><br>KEVENAAR ET AL. |  |
|                              | <b>Examiner</b><br>Matthew B. Smithers | <b>Art Unit</b><br>2437                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 13, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/6/06</u> .                                                  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed September 6, 2006 has been placed in the application file and the information referred to therein has been considered as to the merits.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-12, 14, and 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,806,930 granted to Moia.

Regarding claim 1, Moia meets the claimed limitations as follows:

“An authentication system including a plurality of optical authentication devices and at least one inspection device; each optical authentication device including an optical layer including a representation of a first image visually encrypted under control of an encryption key, where the encrypted first image uniquely identifies the respective authentication device; and the inspection device being operative to decrypt the optical

Art Unit: 2437

layer of the optical authentication device under control of the encryption key and to visualize the first image to enable verification of the unique identification of the authentication device.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 2, Moia meets the claimed limitations as follows:

“A system as claimed in claim 1, wherein the first image is unique for the optical authentication device and/or user of the authentication device.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 3, Moia meets the claimed limitations as follows:

“A system as claimed in claim 2, wherein the first image represents biometrical data, such as a photograph, fingerprint or iris scan, of a user of the authentication device.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 4, Moia meets the claimed limitations as follows:

“A system as claimed in claim 1, wherein the optical layer includes a plurality of polarized cells representing a second image; the inspection device being operative to apply a polarization to the optical layer to enable viewing of the representation of the second image; the first image being visually encrypted into the cells representing the second image and only being visible after visual decryption.” see column 3, line 61 to

Art Unit: 2437

column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 5, Moia meets the claimed limitations as follows:

“A system as claimed in claim 4, wherein the encryption key describes for each cell of the optical layer a rotation of a polarization of light; the inspection device being operative to apply to light passing through each cell of the optical layer the rotation prescribed by the encryption key to reveal a representation of the first image; the first image being visually encrypted into the second image by for each cell of the optical layer determining a rotation of a polarization of light passing through the cell in dependence on a pixel value of a corresponding pixel of the second image, a pixel value of a corresponding pixel of the first image and a rotation prescribed by the encryption key for the cell.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 6, Moia meets the claimed limitations as follows:

“A system as claimed in claim 4, wherein for each cell of the optical layer the rotation is determined by: assigning the corresponding pixel of the second image a distinct rotation value depending on an intensity of the pixel; and adjusting the rotation value with a positive or negative rotation depending on a pixel value of first image and the encryption key.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 7, Moia meets the claimed limitations as follows:

Art Unit: 2437

“A system as claimed in claim 6, wherein the second image is a two color-value image; the distinct rotation values being 0.degree. and 90.degree. and the inspection device being operative to enable inspection of the second image by passing polarized light through the optical layer and a polarization filter; or the distinct rotation values being 0.degree. and 45.degree. and the inspection device being operative to enable inspection of the second image by passing light through a polarization filter and through the optical layer onto a reflective layer.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 8, Moia meets the claimed limitations as follows:

“A system as claimed in claim 7, wherein first image is a two color-value image and the rotation value is adjusted approximately plus or minus 30.degree. .” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 9, Moia meets the claimed limitations as follows:

“A system as claimed in claim 1, wherein for each authentication device the encryption is under control of a unique encryption key associated with the authentication device; the system including a storage for storing for each authentication device the associated encryption key; the inspection device being operative to retrieve for each authentication device the associated encryption key from the storage.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 10, Moia meets the claimed limitations as follows:

“A system as claimed in claim 9, wherein for each authentication device the respective second image includes information identifying the respective unique encryption key.”  
see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 11, Moia meets the claimed limitations as follows:

“A system as claimed in claim 10, wherein the inspector device includes an LCD layer with a plurality of LCD cells arranged to co-operate with the cells of the optical layer; the inspection device being operative to set each cell of the LCD according to a rotation prescribed by the encryption key for a corresponding cell of the area.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 12, Moia meets the claimed limitations as follows:

“A system as claimed in claim 1, wherein the inspector device includes: an input device for loading the encrypted first image; and a processor for, under control of a program, loading the decryption key and decrypting the loaded encrypted first image for subsequent rendering of the decrypted first image on a display.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 14, Moia meets the claimed limitations s follows:

“A system as claimed in claim 1, wherein the second and first image are linked by a verifiable association.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67;

Art Unit: 2437

column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 17, Moia meets the claimed limitations as follows:

“An optical authentication device for use in an authentication system as claimed in claim 1, the optical authentication device including an optical layer including a representation of a first image visually encrypted under control of an encryption key, where the encrypted first image uniquely identifies the authentication device.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 18, Moia meets the claimed limitations as follows:

“An inspection device for use in an authentication system as claimed in claim 1, for inspection of an optical authentication device that includes an optical layer including a representation of a first image visually encrypted under control of an encryption key, where the encrypted first image uniquely identifies the authentication device; the inspection device being operative to decrypt the optical layer of the optical authentication device under control of the encryption key and to visualize the first image to enable verification of the unique identification of the authentication device.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

Regarding claim 19, Moia meets the claimed limitations as follows:

“A method of hiding a first image in a second image in an optical layer of an optical authentication device where the optical layer includes a plurality of polarized cells; the



Art Unit: 2437

method including: obtaining a visual encryption key that describes for each cell of the area a respective rotation of a polarization of light; visually encrypting the first image into the second image by, for each cell of the optical layer, determining a respective rotation of a polarization of light passing through the cell in dependence on a pixel value of a corresponding pixel of the second image, a pixel value of a corresponding pixel of the first image and a rotation prescribed by the encryption key for the cell; the encrypted first image uniquely identifying the optical authentication device; and applying the determined rotations to the respective cells of the optical layer.” see column 3, line 61 to column 4, line 39; column 5, lines 31-67; column 6, line 15 to column 7, line 9; column 7, line 26 to column 9, line 12 and Figures 1-7.

***Allowable Subject Matter***

Claims 13, 15, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 13, the cited prior art fails to specifically teach the rotation value is adjusted less than 10.degree. modulo 90.degree. .

With respect to claim 15, the cited prior art fails to specifically teach the link is based on an identity of a user of the authentication device.

With respect to claim 16, the cited prior art fails to specifically teach the second image represents readable information, such as name, user identity number, or identity number of the authentication device, that is associated with an identity of the user.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Ryzi et al (US 7,358,513) discloses a system for authentication using an optical device.

B. Durst et al (US 7,162,035) discloses a method for detecting counterfeiting.

C. Merry et al (US 7,046,804) discloses a system for authenticating items using optically encrypted images.

D. McGrew (US 6,692,031) discloses a system for authenticating items using a quantum dots arranged as distinct signature and read by an optical reader.

E. Chang et al (US 6,233,075) discloses an optical layer security system.

F. McGrew (US 5,396,559) discloses a security device for anti-counterfeiting.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew B. Smithers whose telephone number is (571) 272-3876. The examiner can normally be reached on Monday-Friday (8:00-4:30) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel L. Moise can be reached on (571) 272-3865. The fax phone

Art Unit: 2437

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew B Smithers/  
Primary Examiner, Art Unit 2437